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Dental Abnormalities in North American Bats. II. Possible Endogenous factors in Dental Caries in *Phyllostomus hastatus*

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Dental decay is a complex disease that has been studied intensively in man, strains of the Norway rat (*Rattus norvegicus*), and in a few other laboratory mammals. Many different endogenous and exogenous factors have been analyzed (see Keyes and Jordan, 1963). It is thought, however, that the basic biochemical, physiochemical, and physical factors that interact to cause dental caries are comparable in all mammals (König, 1965). Although laboratory and clinical studies are numerous, there have been only a few reports of the incidence and causes of dental caries in wild mammals (Colyer, 1936; Hall, 1940, 1945), and no previous study of this disease in bats has been undertaken. In the course of studies of the dentitions of North American Chiroptera, we discovered a high incidence of dental caries in the spear-nosed bat, *Phyllostomus hastatus*, but no evidence of the disease in related species. When disease of any kind is found commonly in one species, but not in closely related kinds, the causes and evolutionary implications of that disease become important areas for investigation.

Among 52 specimens (all adults) of *Phyllostomus hastatus* examined from Nicaragua, Panama, Trinidad, and Venezuela, 21 (40.4%) of the individuals had readily detectable dental caries, resulting, in many cases, in the loss of one or more teeth. The incidence of carious lesions in males (75% of 20 specimens) was found to be significantly greater ($p \geq .99$) than in females (18.7% of 32 specimens). Occurrence of the disease evidently is not geographically variable, because specimens from each of the regions listed had carious lesions. No evidence of dental caries was found, however, in 103 specimens of *Phyllostomus discolor* from Chiapas, Guatemala, Nicaragua, and Trinidad, nor in 12 specimens of *P. elongata* from Peru, nor were

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